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Report on the technical review of the seventh national communication of Czechia

Parties included in Annex I to the Convention were requested by decision 9/CP.16 to submit their seventh national communication to the secretariat by 1 January 2018. According to decision 15/CMP.1, Parties included in Annex I to the Convention that are also Parties to the Kyoto Protocol are required to include in their national communications supplementary information under Article 7, paragraph 2, of the Kyoto Protocol. This report presents the results of the technical review of the seventh national communication and relevant supplementary information under the Kyoto Protocol of Czechia, conducted by an expert review team in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention" and the "Guidelines for review under Article 8 of the Kyoto Protocol".

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Abbreviations and acronyms

AEA	annual emission allocation
Annex II Party	Party included in Annex II to the Convention
BR	biennial report
CH_4	Methane
CHMI	Czech Hydrometeorological Institute
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CTF	common tabular format
ERT	expert review team
ESD	effort-sharing decision
EU	European Union
EU ETS	European Union Emissions Trading System
F-gas	fluorinated gas
GDP	gross domestic product
GHG	greenhouse gas
HFC	Hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
IPPC	integrated pollution prevention and control
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
NA	not applicable
NC	national communication
NF_3	nitrogen trifluoride
NIR	national inventory report
NO	not occurring
N_2O	nitrous oxide
non-ETS sectors	sectors not covered by the European Union Emissions Trading System
PaMs	policies and measures
PFC	Perfluorocarbon
reporting guidelines for supplementary information	"Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol, Part II: Reporting of supplementary information under Article 7, paragraph 2"
SF_6	sulfur hexafluoride
UNFCCC reporting guidelines on NCs	"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications"
WAM	'with additional measures'
WEM	'with measures'

I. Introduction and summary

A. Introduction

1. This is a report on the in-country technical review of the NC7 of Czechia. The review was coordinated by the secretariat in accordance with the "Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention", particularly "Part V: UNFCCC guidelines for the technical review of national communications from Parties included in Annex I to the Convention" (annex to decision 13/CP.20), and the "Guidelines for review under Article 8 of the Kyoto Protocol" (annex to decision 22/CMP.1 and annex I to decision 4/CMP.1).[1]

2. In accordance with the same decisions, a draft version of this report was transmitted to the Government of Czechia, which provided comments that were considered and incorporated, as appropriate, into this final version of the report.

3. The review was conducted from 12 to 17 March 2018 in Prague by the following team of nominated experts from the UNFCCC roster of experts: Mr. Leandro Buendia (Philippines), Ms. Vaiva Jurevičienė (Lithuania), Ms. Karin Kindbom (Sweden) and Mr. Elsayed Sabry (Egypt). Mr. Buendia and Ms. Kindbom were the lead reviewers. The review was coordinated by Mr. Pedro Torres (UNFCCC secretariat).

B. Summary

4. The ERT conducted a technical review of the information reported in the NC7 of Czechia in accordance with the UNFCCC reporting guidelines on NCs (decision 4/CP.5) and the reporting guidelines for supplementary information, in particular the supplementary information required under Article 7, paragraph 2, and on the minimization of adverse impacts under Article 3, paragraph 14, of the Kyoto Protocol (annex to decision 15/CMP.1 and annex III to decision 3/CMP.11).

1. Timeliness

5. The NC7 was submitted on 22 December 2017, before the deadline of 1 January 2018 mandated by decision 9/CP.16.

2. Completeness, transparency of reporting and adherence to the reporting guidelines

6. Issues and gaps identified by the ERT related to the reported information are presented in table 1. The information reported by Czechia in its NC7, including the supplementary information under the Kyoto Protocol, mostly adheres to the UNFCCC reporting guidelines on NCs.

[1] At the time of the publication of this report, the Party had submitted its instrument of acceptance of the Doha Amendment; however, the amendment had not yet entered into force. The implementation of the provisions of the Doha Amendment is therefore considered in this report in the context of decision 1/CMP.8, paragraph 6, pending the entry into force of the amendment.

Table 1

Assessment of completeness and transparency of mandatory information reported by Czechia in its seventh national communication, including supplementary information under the Kyoto Protocol

Section of NC	*Completeness*	*Transparency*	*Reference to description of recommendations*	*Supplementary information under the Kyoto Protocol*	*Completeness*	*Transparency*	*Reference to description of recommendations*
Executive summary	Complete	Transparent		National system	Complete	Transparent	
National circumstances	Complete	Transparent		National registry	Complete	Transparent	
GHG inventory	Complete	Transparent		Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Complete	Transparent	
PaMs	Mostly complete	Mostly transparent	Issues 1, 3 and 4 in table 9	PaMs in accordance with Article 2	Complete	Transparent	
Projections and the total effect of PaMs	Mostly complete	Mostly transparent	Issue 2 in table 13 and issue 1 in table 15	Domestic and regional programmes and/or arrangements and procedures	Mostly complete	Transparent	Issue 1 in table 7
Vulnerability assessment, climate change impacts and adaptation measures	Complete	Transparent		Information under Article 10[a]	NA	NA	NA
Financial resources and transfer of technology[b]	NA	NA	NA	Financial resources[c]	NA	NA	NA
Research and systematic observation	Complete	Transparent		Minimization of adverse impacts in accordance with Article 3, paragraph 14	Complete	Transparent	
Education, training and public awareness	Complete	Transparent					

Note: A list of recommendations pertaining to the completeness and transparency issues identified in this table is included in chapter III below.

[a] The assessment refers to information provided by the Party on the provisions contained in Article 4, paragraphs 3, 5 and 7, of the Convention reported under Article 10 of the Kyoto Protocol, which is relevant to Annex II Parties only. Assessment of the information provided by the Party on the other provisions of Article 10 of the Kyoto Protocol is provided under the relevant substantive headings under the Convention, for example research and systematic observation.

[b] Czechia is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3, 4 and 5, of the Convention.

[c] Czechia is not an Annex II Party and is therefore not obliged to provide information on financial resources under Article 11 of the Kyoto Protocol, including on "new and additional" resources.

3. Summary of reviewed supplementary information under the Kyoto Protocol

7. The supplementary information under Article 7, paragraph 2, of the Kyoto Protocol is incorporated in different sections of the NC7, and the supplementary information under Article 7, paragraph 1, of the Kyoto Protocol is reported in the NIR of the 2017 annual submission. Table 2 provides references to where the information is reported. The technical assessment of the information reported under Article 7, paragraphs 1 and 2, of the Kyoto Protocol is contained in the relevant sections of this report.

Table 2
Overview of supplementary information under the Kyoto Protocol reported by Czechia

Supplementary information	*Reference to section of NC7*
National registry	Section 3.4
National system	Section 3.3
Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17	Section 1
PaMs in accordance with Article 2	Section 4
Domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures	Section 4
Information under Article 10	Sections 3.4, 4, 6.3, 7, 8 and 9
Financial resources[a]	NA
Minimization of adverse impacts in accordance with Article 3, paragraph 14	Reported in the NIR of the Party's 2017 annual submission

[a] Reporting on financial resources under the Kyoto Protocol is relevant to Annex II Parties. As Czechia is not an Annex II Party, it does not have an obligation to provide information on financial resources under Article 11 of the Kyoto Protocol, including on "new and additional" resources.

II. Technical review of the information reported in the seventh national communication, including the supplementary information under the Kyoto Protocol

A. Information on national circumstances and greenhouse gas emissions and removals

1. National circumstances relevant to greenhouse gas emissions and removals

(a) Technical assessment of the reported information

8. In its NC7 Czechia provided information on its national circumstances that explains the relationship between its historic and future emission trends and the climate change policy agenda. The changing nature of those circumstances defines the factors that affect the climate policy development and implementation of the Convention in Czechia. The NC7 contains key data on the structure of the Party's administration, its international activities and international environmental agreements, population, geographic conditions, protection of the environment, climate, economy, energy, resource management, transport, industrial production, waste management and activities in the agriculture and LULUCF sectors. During the review week, Czechia provided additional information on its national circumstances, namely on urbanized landscapes and energy efficiency in buildings.

9. The population of Czechia is slowly growing and the density and ratio of urban dwellers are considered high. The ERT noted that during the period 1990–2015 population and GDP increased by 2.1 and 55.3 per cent, respectively, while GHG emissions per GDP unit and GHG emissions per capita decreased by 58.2 and 36.4 per cent, respectively. The IPPU sector plays an important role in the economy of the Party (the industrial sector

contributed 28.3 per cent of GDP in 2015) and is one of the main sectors contributing to the decoupling of emissions from economic growth. The ERT noted that between 1995 and 2015 GDP in manufacturing industries increased by 224.7 per cent, whereas, in the same period, emissions from energy industries (1.A.1) and manufacturing industries and construction (1.A.2) decreased by 13.3 per cent and 62.1 per cent, respectively. Moreover, GDP in some sectors of the economy (e.g. real estate, commerce, automobile repairs and consumer goods) that significantly contribute to overall GDP (15.8 and 11.5 per cent of the GDP in 2016) has significantly increased since 1995 (by 250.1 and 199.8 per cent, respectively), which has also contributed to the decoupling of emissions from economy growth.

10. Table 3 illustrates the national circumstances of Czechia by providing some indicators relevant to emissions and removals.

Table 3
Indicators relevant to greenhouse gas emissions and removals for Czechia for the period 1990–2015

						Change (%)	
Indicator	*1990*	*2000*	*2010*	*2014*	*2015*	*1990–2015*	*2014–2015*
GDP per capita (thousands 2011 USD using purchasing power parity)	19.97	21.14	28.29	29.12	30.38	52.2	4.3
GHG emissions without LULUCF per capita (t CO_2 eq)	18.95	14.45	13.23	11.96	12.05	–36.4	0.8
GHG emissions without LULUCF per GDP unit (kg CO_2 eq per 2011 USD using purchasing power parity)	0.95	0.68	0.47	0.41	0.40	–58.2	–3.4

Sources: (1) GHG emission data: Czechia's 2017 GHG inventory submission, version 4; (2) population and GDP: World Bank.

Note: The ratios per capita and per GDP unit are calculated relative to GHG emissions without LULUCF; the ratios are calculated using the exact (not rounded) values and may therefore differ from a ratio calculated with the rounded numbers provided in the table.

(b) Assessment of adherence to the reporting guidelines

11. The ERT assessed the information reported in the NC7 of Czechia and identified an issue relating to completeness and adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table 4.

Table 4
Findings on national circumstances relevant to greenhouse gas emissions and removals from the review of the seventh national communication of Czechia

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 8 Issue type: completeness Assessment: encouragement	The ERT noted that Czechia did not provide information on building stock and urban structure in the description of its national circumstances. During the review week, Czechia provided additional information from the Czech Statistical Office on building stock and urban structure, including the structure and total number of settlements by 1 January 2017, the number of residential buildings and apartments, the structure of ownership of apartments and the share of apartments and family houses with central heating. In order to improve the completeness of the description of its national circumstances, the ERT encourages Czechia to report information on building stock and urban structure in its next NC.

Notes: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

2. Information on greenhouse gas inventory arrangements, emissions, removals and trends

(a) Technical assessment of the reported information

12. Total GHG emissions[2] excluding emissions and removals from LULUCF decreased by 35.4 per cent between 1990 and 2015, whereas total GHG emissions including net emissions or removals from LULUCF decreased by 36.7 per cent over the same period. Table 5 illustrates the emission trends by sector and by gas for Czechia.

Table 5
Greenhouse gas emissions by sector and by gas for Czechia for the period 1990–2015

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2014*	*2015*	*1990–2015*	*2014–2015*	*1990*	*2015*
Sector									
1. Energy	158 569.90	120 785.21	111 261.56	96 618.86	97 973.60	–38.2	1.4	81.0	77.1
A1. Energy industries	56 915.91	62 061.93	61 621.14	53 533.77	53 628.86	–5.8	0.2	29.1	42.2
A2. Manufacturing industries and construction	51 234.04	23 425.60	12 082.92	9 703.89	9 921.80	–80.6	2.2	26.2	7.8
A3. Transport	7 284.03	11 932.42	17 007.86	16 966.80	17 747.55	143.7	4.6	3.7	14.0
A4. and A5. Other	31 274.42	16 239.21	14 758.13	11 900.60	12 287.64	–60.7	3.3	16.0	9.7
B. Fugitive emissions from fuels	11 861.51	7 126.06	5 791.51	4 513.80	4 387.76	–63.0	–2.8	6.1	3.5
C. CO_2 transport and storage	NO	NO	NO	NO	NO	NA	NA	NA	NA
2. IPPU	17 080.37	14 720.47	14 965.30	15 787.85	15 413.84	–9.8	–2.4	8.7	12.1
3. Agriculture	17 049.98	8 975.75	7 761.98	8 280.62	8 482.99	–50.2	2.4	8.7	6.7
4. LULUCF	–6 487.71	–8 805.07	–7 200.07	–7 801.09	–6 640.69	2.4	–14.9	NA	NA
5. Waste	3 126.83	3 743.17	4 637.01	5 151.31	5 256.41	68.1	2.0	1.6	4.1
6. Other	NO	NO	NO	NO	NO	NA	NA	NA	NA
Indirect CO_2	2 121.74	1 155.54	967.43	777.69	798.70	–62.4	2.7	NA	NA
Gas[a]									
CO_2	161 649.59	125 788.18	116 159.34	102 799.18	103 769.75	–35.8	0.9	82.5	81.6
CH_4	23 450.87	15 221.02	14 242.64	13 628.21	13 694.48	–41.6	0.5	12.0	10.8
N_2O	10 642.52	6 829.79	5 746.66	6 081.60	6 112.73	–42.6	0.5	5.4	4.8
HFCs	NO	272.92	2 348.97	3 229.53	3 455.08	NA	7.0	NA	2.7
PFCs	NO	4.69	48.01	3.02	1.96	NA	–35.1	NA	0.0
SF_6	84.10	107.99	80.23	94.73	90.55	7.7	–4.4	0.0	0.1
NF_3	NO	NO	NO	2.35	2.29	NA	–2.8	NA	0.0
Total GHG emissions without LULUCF	**195 827.08**	**148 224.60**	**138 625.85**	**125 838.63**	**127 126.83**	**–35.1**	**1.0**	**100.0**	**100.0**
Total GHG emissions with LULUCF	**189 339.37**	**139 419.53**	**131 425.78**	**118 037.53**	**120 486.14**	**–36.4**	**2.1**	**NA**	**NA**
Total GHG emissions without LULUCF, including indirect CO_2	**197 948.82**	**149 380.15**	**139 593.28**	**126 616.31**	**127 925.53**	**–35.4**	**1.0**	**NA**	**NA**

[2] In this report, the term "total GHG emissions" refers to the aggregated national GHG emissions expressed in terms of CO_2 eq excluding LULUCF, unless otherwise specified. Values in this paragraph are calculated based on the 2017 annual submission, version 4.

	GHG emissions (kt CO_2 eq)					*Change (%)*		*Share (%)*	
	1990	*2000*	*2010*	*2014*	*2015*	*1990–2015*	*2014–2015*	*1990*	*2015*
Total GHG emissions with LULUCF, including indirect CO_2	**191 461.11**	**140 575.08**	**132 393.21**	**118 815.22**	**121 284.84**	**–36.7**	**2.1**	**NA**	**NA**

Source: GHG emission data: Czechia's 2017 annual submission, version 4.

[a] Emissions by gas without LULUCF and without indirect CO_2.

13. The decrease in total emissions was driven mainly by factors such as the decrease in production and subsequent restructuring of the economy in the early 1990s, which was triggered by the change in the political system in Czechia, as well as the economic recession caused by the 2008 world economic crisis, leading to a drop in industrial activity and other economic activities. In addition, the adoption of PaMs to reduce GHG emissions and the introduction of low-carbon technologies and renewable energy sources with the modernization and reform of the industrial and energy sectors, as well as improvements to agriculture and waste management practices, have had an impact on reducing GHG emissions. CO_2 emissions per unit of electricity produced decreased from 0.94 kt CO_2/GWh in 1990 to 0.62 kt CO_2/GWh in 2016, with a minimum of 0.59 kt CO_2/GWh in 2014. The increase between 2014 and 2016 resulted from the decrease in the share of energy generated by hydropower plants caused by unfavourable climatic conditions.

14. The energy sector is by far the largest contributor to the total GHG emissions in the national inventory (its share was 76.5 per cent in 2015). Between 1990 and 2015, GHG emissions from the energy sector decreased by 38.2 per cent (60,596.3 kt CO_2 eq), owing mainly to the decrease in fuel combustion driven by the restructuring of the economy, which resulted in increased energy efficiency and increasing use of renewable energy sources. However, emissions from the transport sector increased by 143.7 per cent in the same period, which is related to the steadily increasing number of road vehicles and kilometres driven. The share of renewable energy sources has increased in Czechia and the target share of 13 per cent renewable energy sources in the primary energy supply by 2020 under the EU renewable energy directive (2009/28/EC) has already been achieved. However, the ERT observed a limited increase in renewable energy use since 2013, after the boom in the installation of photovoltaic systems between 2010 and 2011, and a significant amount of electricity being produced by coal-fired power plants (53.4 per cent of electricity produced in 2015). During the review, the Party stated that the share of coal in the energy mix is necessary for energy independence and security and that the coal is necessary for the existing district heating systems. The Party further stated that it is looking into options for replacing coal-fired power plants by cogeneration plants. Nuclear power plants produced a large share (32.0 per cent) of all electricity generated in 2015. The Party stated that the future of nuclear energy in Czechia is under discussion and the possible launch of new nuclear energy plants has been postponed to 2030.

15. Between 1990 and 2015, GHG emissions from IPPU decreased by 9.8 per cent (1,666.53 kt CO_2 eq), owing mainly to the restructuring of the economy and increased use of recycled materials in recent years. The restructuring of the economy resulted in large structural changes in 2000–2008 aiming to modernize and reform the industrial sector. The global economic crisis in 2008 also had an impact because of the drop in production in the automobile industry, machinery, electronics and other activities, which also led to decreased GHG emissions. After the crisis in 2008, industries such as the automobile industry, machinery, electronics and manufacture of rubber and plastic products had a positive recovery associated with an increase in foreign demand. In 2015, the categories that contributed most emissions in the IPPU sector were metal industry (2.C) (44.7 per cent), product uses as substitutes for ozone-depleting substances (2.F) (22.4 per cent), mineral industry (16.4 per cent) and chemical industry (2.B) (13.4 per cent).

16. Between 1990 and 2015, GHG emissions from the agriculture sector decreased by 50.2 per cent (8,566.99 kt CO_2 eq), owing mainly to the transformation of the economy and thus decrease in livestock and mineral nitrogen fertilization. Additionally, emissions from

agricultural soils decreased due to the shift in land uses, as significant areas of cropland were converted to grassland or afforested due to increasing perennial cropland areas, which consequently increased the carbon sink. The LULUCF sector was a net sink in 2015 (–6,640.69 kt CO_2 eq); net GHG removals have increased by 152.98 kt CO_2 eq since 1990. This trend was mainly driven by the increasing volume of growing stock in forest land and an increase in carbon removals due to afforestation.

17. Between 1990 and 2015, GHG emissions from the waste sector increased by 68.1 per cent (2,129.58 kt CO_2 eq), owing mainly to increased waste volumes in solid waste disposal sites, despite the fact that composting of biodegradable waste has been strongly increasing in recent years (emission reductions due to the increase in composting of biodegradable waste were not able to significantly offset the increase in total emissions due to the increase in waste volumes). According to information provided during the review, material and energy recovery are increasing in Czechia; therefore, a decrease in landfilling was observed.

18. CO_2 emissions decreased from 161,649.59 kt CO_2 to 103,769.75 kt CO_2 in the period 1990–2015 (–35.8 per cent), owing mainly to lower emission levels in the energy and IPPU sectors. The decrease in CO_2 emissions was driven mainly by the large structural changes in and reform of the industrial sector between 2000 and 2008, followed by the economic recession caused by the 2008 world economic crisis, leading to a drop in industrial and other economic activity. The adoption of PaMs, the implementation of low-carbon technologies in the industrial and energy sectors and the use of renewable energy sources have also played an important role in reducing GHG emissions.

19. In 2015, CH_4 emissions were 41.6 per cent below the 1990 level, owing mainly to a decrease in the use of coal and an increase in the share of renewable energy sources in primary energy production, as well as to the decrease in emissions from the agriculture sector related to the decrease in the number of livestock.

20. In 2015, N_2O emissions were 42.6 per cent below the 1990 level, owing mainly to decreased emissions from the agriculture sector and from chemical industry (2.B) despite an increase in emissions from the transport sector (1.A.3). The decrease in N_2O emissions from the agriculture sector is related to the change in agricultural production to a market economy and the recession (the use of mineral fertilizers decreased). The decrease in emissions from chemical industry is related to the economic transition and improved technologies.

21. HFC emissions increased markedly between 1995 and 2015, from 0.32 kt CO_2 eq to 3,455.08 kt CO_2 eq. The increase was driven by the increase in refrigeration and air conditioning (the main sources of HFCs). PFC emissions increased between 1995 and 2015 from 0.01 kt CO_2 to 1.96 kt CO_2 eq and this is also related to the increase in refrigeration and air conditioning. In 2015, SF_6 emissions reached 90.55 kt CO_2 eq, which is 1.0 per cent higher than the base-year (1995) level. In 2015, emissions of NF_3 amounted to 2.29 kt CO_2 eq, which is 2.8 per cent lower than in 2014. F-gases are not produced in Czechia; therefore, F-gas emissions are related to use only. The increase in emissions can be explained by the increase in the use and manufacture of electronic devices, energy-efficient windows, fire extinguishers, propellants for aerosol cans and use of F-gases as expanding agents.

22. The summary information provided on GHG emissions was consistent with the information reported in the Party's 2017 annual submission.

(b) Assessment of adherence to the reporting guidelines

23. The ERT assessed the information reported in the NC7 of Czechia and identified an issue relating to transparency. The finding is described in table 6.

Table 6
Findings on greenhouse gas inventory information from the review of the seventh national communication of Czechia

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 10	In annex 1 to its NC7 (p.223) Czechia reported its emissions under the ESD to be 56.62 Mt CO_2 eq in 2015, whereas in a presentation the Party stated that the emissions were estimated to be 61.28 Mt CO_2 eq in 2015.
	Issue type: transparency	During the review, Czechia clarified that the figure reported in the NC7 was based on an approximated inventory, in which the emissions for 2015 had been underestimated.
	Assessment: encouragement	The ERT encourages the Party to provide in its next NC the latest available estimates of its GHG emissions under the ESD.

Notes: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

3. National system for the estimation of anthropogenic emissions by sources and removals by sinks

(a) Technical assessment of the reported information

24. Czechia provided in its NC7 a description of how its national system for the estimation of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol is performing the general and specific functions defined in the annex to decision 19/CMP.1. The description includes all the elements mandated by paragraph 30 of the annex to decision 15/CMP.1. The national system has been in operation since 2005 and it was established as per the requirements of Article 5, paragraph 1, of the Kyoto Protocol. In addition, the national system responds to the requirements of the EU monitoring mechanism regulation (525/2013). The ERT noted that the organizational changes to the national system reported in the NC7, which relate mainly to staff appointments at CHMI, did not affect the functions of the national system.

(b) Assessment of adherence to the reporting guidelines

25. The ERT assessed the information reported in the NC7 of Czechia and recognized that the reporting is complete and transparent. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

4. National registry

(a) Technical assessment of the reported information

26. In its NC7 Czechia provided information on how its national registry performs the functions in accordance with the annex to decision 13/CMP.1 and the annex to decision 5/CMP.1 and on how it complies with the requirements of the technical standards for data exchange between registry systems. The ERT took note of the review of the changes to the national registry reflected in the report on the individual review of the 2016 annual submission of Czechia.[3] The ERT also took note of the consolidated system of EU registries that Czechia is part of.

(b) Assessment of adherence to the reporting guidelines

27. The ERT assessed the information reported in the NC7 of Czechia and recognized that the reporting is complete and transparent. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

[3] FCCC/ARR/2016/CZE.

B. Information on policies and measures and institutional arrangements

1. Domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol

(a) Technical assessment of the reported information

28. For the second commitment period of the Kyoto Protocol, from 2013 to 2020, Czechia committed to contributing to the joint EU effort to reduce GHG emissions by 20 per cent below the base-year level. A key policy instrument in Czechia is the Climate Protection Policy of the Czech Republic, which replaces the previous National Programme to Abate the Climate Change Impacts in the Czech Republic. The policy defines the GHG reduction targets for 2020 and 2030 and the indicative trajectories and objectives for 2040 and 2050. Also, it defines PaMs for specific sectors at the national level, namely energy, transport, industry, agriculture, LULUCF and waste. The implementation of the Climate Protection Policy of the Czech Republic started in 2017 and its evaluation and update are scheduled for 2021 and 2023, respectively. Other national policy instruments in Czechia comprise the National Emission Reduction Programme, the State Environmental Policy (2012–2020), the State Energy Policy, the State Programme to Promote Energy Savings and Renewable Energy Sources and the National Renewable Energy Action Plan, the National Plan for Clean Mobility and the Waste Management Plan (2015–2024).

29. Implementation of the Kyoto Protocol by Czechia is underpinned by the Climate Protection Policy of the Czech Republic, according to which Czechia is aiming to reduce emissions by 32 Mt CO_2 eq compared with the 2005 level by 2020 and by 44 Mt CO_2 eq compared with the 2005 level by 2030.

30. The overall responsibility for climate change policymaking lies with the Ministry of Environment, and a number of national institutions are involved in the implementation of the policy. More specifically, ministries such as the Ministry of Environment, Ministry of Industry and Trade, Ministry of Transport, Ministry of Agriculture, Ministry of Education, Youth and Sports, Ministry of Health and Ministry of Regional Development are responsible for drafting, implementing and monitoring sector-specific PaMs aimed at reducing emissions and/or adapting to climate change impacts as per the nature of the measure.

31. Czechia is a Party to multilateral agreements on access to information, including the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters. Moreover, as an EU member State, the EU directive on access to environmental information (2003/4/EC) also applies.

32. Forestry in Czechia is regulated by the Forest Act (Act No. 289/1995 Coll., on Forests, as amended), which constitutes the fundamental legislative instrument and regulates carbon stocks and the reduction of GHG emissions and determines conditions for the preservation, tending and regeneration of forests as national riches. Moreover, Czechia has adopted forest management plans that work as guidelines for areas under 50 ha and include, for example, binding provisions for maximum permissible felling and minimum shares of soil-improving and reinforcing species. In 2008 Czechia adopted the National Forestry Programme II, which contains specific measures to improve the resilience of forest ecosystems by supporting diversified growth with the greatest possible use of natural processes. Finally, the State Forest Policy, adopted in 2012, includes enhancing biodiversity in forest ecosystems, their integrity and ecological stability as one of the main principles. Together, these instruments form a framework that ensures that the implementation of activities under Article 3, paragraph 3, and elected activities under Article 3, paragraph 4, of the Kyoto Protocol contributes to the conservation of biodiversity and the sustainable use of natural resources.

(b) Assessment of adherence to the reporting guidelines

33. The ERT assessed the information reported in the NC7 of Czechia and identified an issue relating to transparency. The finding is described in table 7.

Table 7
Findings on domestic and regional programmes and/or legislative arrangements and procedures related to the Kyoto Protocol from the review of the seventh national communication of Czechia

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation*
1	Reporting requirement specified in paragraph 37 Issue type: completeness Assessment: recommendation	Czechia reported in its NC7 information on domestic and regional programmes and/or legislative arrangements and procedures relating to the Kyoto Protocol. However, the ERT noted that the NC7 does not include some of the information required by the UNFCCC reporting guidelines on NCs, including (1) a description of procedures for addressing cases of non-compliance under domestic law and (2) a description of any provisions to make publicly accessible the information on legislative arrangements and enforcement and administrative procedures (e.g. rules on enforcement and administrative procedures, and action taken). During the review, the Party explained that the EU ETS and the ESD constitute the EU-wide legislation for achieving its targets. The Party also explained that the provisions for non-compliance under the ESD are included in Article 7 of the ESD, specifically the provisions for when the GHG emissions of a member State exceed its AEA. The ERT recommends that Czechia include in its next NC: (1) a description of procedures for addressing cases of non-compliance under domestic law as provided during the review and (2) a description of any provisions to make publicly accessible the information on legislative arrangements and enforcement and administrative procedures (e.g. rules on enforcement and administrative procedures, and action taken).

Notes: Paragraph number listed under reporting requirement refers to the relevant paragraph of the reporting guidelines for supplementary information. The reporting on the requirements not included in this table is considered to be complete and transparent.

2. Policies and measures, including those in accordance with Article 2 of the Kyoto Protocol

(a) Technical assessment of the reported information

34. Czechia provided information on its package of PaMs implemented, adopted and planned, by sector and by gas, in order to fulfil its commitments under the Convention and its Kyoto Protocol. Czechia reported on its policy context and legal and institutional arrangements put in place to implement its commitments and monitor and evaluate the effectiveness of its PaMs.

35. Czechia provided information on a set of PaMs similar to those previously reported, with a few exceptions. Czechia also reported in its NC7 that there have been no substantial changes made since the previous submission to its institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its target.

36. The changes reported by Czechia are related to staff appointments in the national inventory system, which did not affect the arrangements for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress made towards its target. During the review, Czechia provided further information on changes to its institutional arrangements. The Party informed the ERT that an Interministerial Working Group on Climate Protection was established in 2015. The national platform contributes to and improves cooperation, exchange of information and coordination in relation to the planning and implementation of specific climate change PaMs at ministry level. Also, other stakeholders and non-governmental representatives are actively involved in the Interministerial Working Group in order to ensure transparency at the governmental and non-governmental level.

37. Czechia gave priority to implementing the PaMs that make the most significant contribution to its emission reduction efforts. The Party provided information on how it believes its PaMs are modifying longer-term trends in anthropogenic GHG emissions and removals in accordance with the objective of the Convention. It reported on how it

periodically updates its PaMs to reduce greater levels of emissions and on the PaMs that have been discontinued since the previous submission.

38. Some PaMs are deferred to the regional level. Regional bodies are involved in implementing some energy-saving programmes, the use of renewable energy sources and improving transportation infrastructure. Regions also play an important role in the preparation of regional waste management plans and in actual waste management, including operation of landfills, composting facilities and facilities involved in energy and material recovery of waste.

39. The key overarching cross-sectoral policy in the EU is the 2020 climate and energy package, adopted in 2009, which includes the revised EU ETS and the ESD. The package is supplemented by renewable energy and energy efficiency legislation and legislative proposals on the 2020 targets for CO_2 emissions from cars and vans, the carbon capture and storage directive, and the general programmes for environmental conservation, namely the 7th Environment Action Programme and the clean air policy package.

40. In operation since 2005, the EU ETS is a cap-and-trade system that covers all significant energy-intensive installations (mainly large point emissions sources such as power plants and industrial facilities) that produce 40–45 per cent of the GHG emissions of the EU. It is expected that the EU ETS will guarantee that the 2020 target (a 21 per cent emission reduction below the 2005 level) will be achieved for sectors under the scheme. The third phase of the EU ETS started in 2013 and the system now includes aircraft operations (since 2012) as well as N_2O emissions from chemical industries, PFC emissions from aluminium production and CO_2 emissions from industrial processes (since 2013).

41. The ESD became operational in 2013 and covers sectors outside the EU ETS, including transport (excluding domestic and international aviation, and international maritime transport), residential and commercial buildings, agriculture and waste, together accounting for 55–60 per cent of the GHG emissions of the EU. The aim of the ESD is to decrease GHG emissions in the EU by 10 per cent below the 2005 level by 2020 and it includes binding annual targets for each member State for 2013–2020. Czechia's target under the ESD is to limit its emission growth to 9.0 per cent above the 2005 level by 2020.

42. An additional EU-wide policy that has significant mitigation impact in Czechia is the IPPC directive. The Integrated Prevention Act implements the IPPC directive in Czechia, which reported that, with regard to GHG emissions, the Integrated Prevention Act requires the regulator to apply the best available technology concept, which should lead to reduced emissions and increased energy efficiency of production.

43. Czechia highlighted the EU-wide mitigation actions that are under development, such as the requirement for all member States to submit an Integrated National Energy and Climate Plan, for the period 2021–2030, to the EU by 31 December 2018. Under this requirement, member States must set out their objectives, targets and contributions relating to decarbonization, energy efficiency, energy security, the internal energy market, research, innovation and competitiveness. The requirement was established under the regulation on the governance of the Energy Union, the goals of which are, inter alia, to ensure that the objectives of the Energy Union, especially the EU 2030 energy and climate targets, are achieved and to incorporate the provisions of the existing EU monitoring mechanism regulation and harmonize them with the provisions of the Paris Agreement.

44. Czechia has introduced national-level policies to achieve its targets under the ESD and domestic emission reduction targets. Some of the adopted policy frameworks and cross-sectoral measures that have mitigation impacts include the Integrated Prevention Act, the State Environmental Policy 2012–2020, the State Energy Policy, the Climate Protection Policy of the Czech Republic, the National Renewable Energy Plan (which implements EU directive 2009/28 on renewable energy) and the National Energy Efficient Action Plan (which implements EU directive 2012/27/EU on energy efficiency). The Climate Protection Policy outlines a low-carbon development strategy, the main objective being to determine an appropriate mix of cost-effective measures and tools in key sectors that will lead to achieving the Party's GHG emission reduction targets until 2030, with an outlook to 2050.

45. The key national PaMs targeting ESD sectors are the New Green Savings Programme (2015–2020), which supports energy efficiency improvements and increasing the use of renewable energy in residential and commercial buildings, and the territorial planned measures, which aim to reduce energy consumption in the transport sector following the improvement of transport infrastructure. Other policies that have delivered significant emission reductions are the Rural Development Programme in the agriculture sector and the Waste Management Programme in the waste sector.

46. Czechia highlighted domestic mitigation actions that are under development, such as a road toll for trucks weighing more than 3.5 t and economic and tax tools to support low-emission vehicles. Both measures are planned to be implemented in 2020. Additionally, in its NC7 Czechia discussed measures in preparation, such as an amendment to the government order on the purchase of road vehicles and a draft government order on biofuel sustainability criteria and reduction of emissions from fuels. During the review, Czechia stated that a new scheme of support for renewable energy sources for after 2020 is also under preparation.

47. Table 8 provides a summary of the reported information on the PaMs of Czechia.

Table 8
Summary of information on policies and measures reported by Czechia

Sector	*Key PaMs*	*Estimate of mitigation impact by 2020 (kt CO_2 eq)*	*Estimate of mitigation impact by 2030 (kt CO_2 eq)*
Policy framework and cross-sectoral measures	EU ETS	3 230	5 249
	Climate Protection Policy of the Czech Republic	NA	NA
	Operational Programme Environment 2014–2020	528	443
	National Emission Reduction Programme	NA	NA
Energy	State Energy Policy	NA	NA
	Energy Management Act	NA	NA
Transport	Territorial planned measures	387	676
	Regulation on CO_2 from light-commercial vehicles	486	787
	Support for biofuels	176	152
	Regulation on CO_2 from cars	237	803
	Modal shift	134	109
	Operational Programme Transport	177	173
	National Action Plan for Clean Mobility	NA	NA
Renewable energy	Promotion of renewable energy sources (preferential feed-in tariffs)	2 541	2 403
	National Renewable Energy Action Plan	NA	NA
Energy efficiency	Operational Programme Enterprise and Innovation for Competitiveness	2 320	2 040
	Implementation of the EU directive on cogeneration	1 876	1 367
	New Green Savings Programme 2015–2020 (energy efficiency and renewable energy)	1 069	896
	Efficiency improvement of district heating systems	621	495
	National Energy Efficiency Action Plan	NA	NA
IPPU	Integrated Prevention Act (IPPC directive)	2 600	2 746

Sector	*Key PaMs*	*Estimate of mitigation impact by 2020 (kt CO_2 eq)*	*Estimate of mitigation impact by 2030 (kt CO_2 eq)*
	EU F-gas regulation (517/2014)	552	2 029
Agriculture	Action Plan for Development of Organic Farming	250	NA
	Biomass Action Plan in the Czech Republic for 2012–2020	125	255
	Rural Development Programme 2014–2020	200	357
LULUCF	NA		
Waste	Waste Management Plan of the Czech Republic 2015–2024	330	330

Note: The estimates of mitigation impact are estimates of emissions of CO_2 or CO_2 eq avoided in a given year as a result of the implementation of mitigation actions.

48. During the review, Czechia provided further information on how it monitors and evaluates the implementation of its PaMs, including the institutional arrangements for monitoring GHG mitigation policies. Czechia explained that ex ante evaluation and monitoring through specific indicators is usually performed for all the major national and EU subsidy programmes by the responsible ministries. This work is partially coordinated by the Interministerial Working Group on Climate Protection. Czechia also explained that early in 2018 the Ministry of Environment certified a specific methodology for evaluating and designing PaMs to reduce GHG emissions. The aim of the methodology is to unify, refine and simplify the preparation of strategic documents, especially regarding the effects of mitigation actions. The methodology also provides several specific calculation tools and recommended emission factors. Some PaMs in the energy and industrial sectors are evaluated ex post and monitored by the Ministry of Industry and Trade and other ministries (e.g. Green Savings Programme 2007–2013). Other sectors are evaluated according to their respective emission trends.

(b) Policies and measures in the energy sector

49. **Energy supply**. The main strategic document for the energy sector is the State Energy Policy, which was approved in 2015. The State Energy Policy covers a period of 25 years and it will be evaluated every five years. The key strategic priorities are (1) a balanced energy mix; (2) energy savings and efficiency; (3) infrastructure and international cooperation; (4) research, development and innovation; and (5) energy security. The State Energy Policy relies on specific implementation documents or action plans, such as the National Renewable Energy Action Plan, the National Energy Efficiency Action Plan, the National Action Plan for Smart Grids, the National Action Plan for Clean Mobility and the National Action Plan for Nuclear Energy.

50. **Renewable energy sources**. The overarching implementing document for renewable energy sources is the National Renewable Energy Action Plan. The most important PaM targeting renewable energy is the promotion of renewable energy sources (preferential feed-in tariffs), which is expected to reduce emissions by about 2,541 kt CO_2 eq in 2020 and 2,403 kt CO_2 eq in 2030. In addition, several PaMs in the energy sector target both energy efficiency and renewable energy. During the review, Czechia explained that the share of renewable energy sources in final energy consumption increased from 6.8 per cent in 2004 to 14.9 per cent in 2016 and that the strategic goal for the share of renewables in primary energy sources by 2040 is to be within the range of 17–22 per cent.

51. **Energy efficiency**. The National Energy Efficiency Action Plan is the primary implementing document for energy efficiency. The PaMs with the highest mitigation impact are the Operational Programme Enterprise and Innovation for Competitiveness and the implementation of the EU directive on cogeneration. The Operational Programme Enterprise and Innovation for Competitiveness supports energy efficiency improvements and use of renewable energy sources in the energy sector, industry sector and services. The

mitigation effect is estimated to be 2,320 kt CO_2 eq in 2020 and 2,040 kt CO_2 eq in 2030. The directive on cogeneration, for example, obliges distribution companies to connect cogeneration plants to the grid. The mitigation impact is estimated at 1,876 kt CO_2 eq in 2020 and 1,367 kt CO_2 eq in 2030. In its NC7 Czechia reported on several additional PaMs targeting energy efficiency, such as the State Programme for the Support of Energy Savings and Use of Renewable Energy Sources, and support for voluntary commitments to energy savings.

52. **Residential and commercial sectors**. The New Green Savings Programme 2015–2020 supports, through investment subsidies, energy efficiency measures in residential and commercial buildings and increasing the share of renewable energy sources. It is financed by EU ETS auction revenues and is a continuation of an earlier similar programme (Green Savings Programme 2007–2013). The largest share of subsidies is used for thermal insulation in buildings and the installation of solar energy systems. The mitigation impact is estimated to be 1,069 kt CO_2 eq in 2020 and 896 kt CO_2 eq in 2030. The New Green Savings Programme was highlighted by Czechia to be one of the most effective programmes on energy efficiency. The Operational Programme Environment supports energy efficiency measures in public buildings and the replacement of old inefficient boilers in households. The sum of the emission reductions resulting from the Operational Programme Environment 2007–2013 and the Operational Programme Environment 2014–2020 is estimated at 793 kt CO_2 eq in 2020 and 665 kt CO_2 eq in 2030. The Integrated Regional Operating Programme also supports energy efficiency measures in buildings, with estimated emission reductions of 672 kt CO_2 eq in 2020 and 563 kt CO_2 eq in 2030.

53. **Transport sector**. The overarching implementing document in the transport sector is the National Action Plan for Clean Mobility. The PaMs targeting infrastructure planning are the territorial planned measures and the Operational Programme Transport. They both aim to reduce energy consumption in the transport sector as a result of improving transport infrastructure. The estimated mitigation impact of the territorial planned measures is 387 kt CO_2 eq in 2020 and 676 kt CO_2 eq in 2030. The mitigation effect of the Operational Programme Transport is estimated at 177 kt CO_2 eq in 2020 and 173 kt CO_2 eq in 2030. The PaMs targeting vehicle technologies and fuel quality are the regulation on CO_2 from light-commercial vehicles, which has an estimated mitigation impact of 486 kt CO_2 eq in 2020 and 787 kt CO_2 eq in 2030; the regulation on CO_2 from cars, which has an estimated mitigation impact of 237 kt CO_2 eq in 2020 and 803 kt CO_2 eq in 2030; and support for biofuels, which has an estimated mitigation impact of 176 kt CO_2 eq and 152 kt CO_2 eq in 2020 and 2030, respectively. The PaMs aimed at behavioural changes are the National Strategy of Cycling, and modal shift. Together, the PaMs in the transport sector are expected to deliver a higher mitigation impact in 2030 than in 2020.

54. The NC7 includes information on how Czechia promotes and implements the decisions of the International Civil Aviation Organization and the International Maritime Organization to limit emissions from aviation and marine bunker fuels.

(c) Policies and measures in other sectors

55. **Industrial processes**. The main PaMs in the IPPU sector are the Integrated Prevention Act, which implements the IPPC directive, and the EU regulation on F-gases. The IPPC directive, among other things, sets emission limits on pollutants and requires the use of best available technologies. Its mitigation effect in Czechia is estimated to be 2,600 kt CO_2 eq in 2020 and 2,746 kt CO_2 eq in 2030. The regulation on F-gases is projected to reduce emissions by 552 kt CO_2 eq in 2020 and 2,029 kt CO_2 eq in 2030.

56. **Agriculture**. The main PaMs in the agriculture sector are the Rural Development Programme 2014–2020, the Biomass Action Plan in the Czech Republic 2012–2020 and the Action Plan for Development of Organic Farming. The Rural Development Programme 2014–2020 is the basic strategic document, specifying in detail the measures for meeting the objectives of the development of rural areas in Czechia. Its mitigation effect is estimated to be 200 kt CO_2 eq in 2020 and 357 kt CO_2 eq in 2030. The Biomass Action Plan in the Czech Republic 2012–2020 defines appropriate measures and principles for effective and efficient use of the energy potential of biomass, and the mitigation effect is estimated to be 125 kt CO_2 eq in 2020, increasing to 255 kt CO_2 eq in 2030.

57. **LULUCF**. The main strategic documents in Czechia related to the LULUCF sector are the National Forestry Programme, the Ministry of Agriculture Strategy with a view until 2030, and the Strategy for Adaptation to Climate Change. One of the key actions in the National Forestry Programme is to alleviate the impacts of expected global climate change and extreme meteorological phenomena. During the review, the Party explained that in the Ministry of Agriculture Strategy there are two strategic targets related directly to forests, namely sustainable forest management and competitiveness of the forestry-based value chain. In the Strategy for Adaptation to Climate Change there are three strategic objectives related to forests, namely promoting natural adaptability of forests and enhancing their resilience to climate change, protection and restoration of the natural water regime in forests, and conceptual extension of nature protection to the perspective of climate change.

58. **Waste management**. The main PaM in the waste sector is the Waste Management Plan 2015–2024, which governs waste management in the country. It sets preferences for management practices and offers projections for waste development. The plan focuses on waste prevention, increasing the share of recycling and compulsory separation of biologically degradable communal waste. The main objectives are to increase renewable energy, enhance recycling, improve waste treatment technologies, reduce landfilling, enhance CH_4 collection and use, and improve wastewater management systems. The Waste Management Plan is expected to mitigate 330 kt CO_2 eq in 2020.

(d) Minimization of adverse impacts in accordance with Article 2 and Article 3, paragraph 14, of the Kyoto Protocol

59. In its NC7 Czechia reported information on how it strives to implement PaMs under Article 2 of the Kyoto Protocol in such a way as to minimize adverse effects, including the adverse effects of climate change and effects on international trade and social, environmental and economic impacts on other Parties, especially developing country Parties.

60. Further information on how Czechia strives to implement its commitments under Article 3, paragraph 14, of the Kyoto Protocol in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties was reported in the Party's 2017 annual submission. The reporting included information on supporting technology and capacity development through development assistance and the establishment of a technical training centre for the power sector at the University of Ulaanbaatar in Mongolia. Czechia also reported on cooperating in several bilateral development assistance projects that focus on reducing dependence on fossil fuels and developing renewable energy sources. For the assessment of economic and social consequences, Czechia referred to information on the EU-wide procedures for assessment of impacts and consequences reported in the BR3 of the EU.[4]

(e) Assessment of adherence to the reporting guidelines

61. The ERT assessed the information reported in the NC7 of Czechia and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table 9.

Table 9
Findings on policies and measures, including those in accordance with Article 2 of the Kyoto Protocol, from the review of the seventh national communication of Czechia

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in	The ERT noted that the reporting of PaMs is not organized by sector and by gas in the NC7. The ERT also noted that there are no individual descriptions of the principal PaMs

[4] Available at https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports-annex-i-parties/submitted-biennial-reports-brs-from-annex-i-parties.

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
	paragraph 17 Issue type: transparency Assessment: recommendation	in the NC7. This information was, however, provided in the BR3 and CTF table 3, which constitutes annex 1 to the NC7. During the review, Czechia provided further information on which sectors and gases are affected by the individual measures and on the principal PaMs for each sector separately. Czechia stated that the reference to BR3 CTF table 3 in annex 1 to the NC7 was omitted from the NC7 by mistake. The ERT recommends that Czechia organize the reporting of its PaMs by sector, subdivided by gas, in its next NC or provide a link to where in the BR the information is provided, thus ensuring consistency between the NC and the BR when they are submitted in the same year.
2	Reporting requirement specified in paragraph 21 Issue type: completeness Assessment: encouragement	Czechia provided a description of the way in which progress with PaMs to mitigate GHG emissions is monitored and evaluated over time for some of its PaMs. However, a description of the institutional arrangements for monitoring GHG mitigation policy was not included in the NC7. Moreover, the ERT noted that an Interministerial Working Group on Climate Protection was established in 2015 by Czechia, after the submission of the NC6. However, no information thereon was provided in the NC7, in particular on its role in monitoring GHG mitigation policy. During the review, Czechia stated that information on the domestic institutional arrangements was included in a report on the national system, which it provided to the ERT. Czechia further provided the ERT with detailed information on the entities responsible for the implementation of PaMs and the indicators used to monitor and evaluate progress over time. However, specific information on the role of the Interministerial Working Group on Climate Protection in monitoring GHG mitigation policy was not provided. The ERT welcomes the information provided during the review and encourages Czechia to include in its next NC information on the institutional arrangements for monitoring GHG mitigation policy, including indicators and entities used to monitor and evaluate the progress of each PaM over time, such as the newly established Interministerial Working Group on Climate Protection.
3	Reporting requirement specified in paragraph 22 Issue type: completeness Assessment: recommendation	The ERT noted that the presentation of each PaM does not in all cases include information on all the subjects listed in the UNFCCC reporting guidelines on NCs (e.g. the GHG affected, type of PaM). However, the ERT noted that the information is available in the BR3 in CTF table 3, submitted as an annex to the NC7. During the review, Czechia provided detailed information on each PaM in the same manner as was provided for the PaMs in BR3 CTF table 3. Czechia clarified that the reference to BR3 CTF table 3 was omitted by mistake from the NC7. The ERT reiterates the recommendation made in the previous review report that Czechia report information on all of the subjects listed in paragraph 22 of the UNFCCC reporting guidelines on NCs (such as the GHG affected and the type of PaM) for each PaM.
4	Reporting requirement specified in paragraph 22 Issue type: transparency Assessment: recommendation	In annex 4 to the NC7, Czechia reported the status of implementation of the quantifiable PaMs as being either "implemented" or "planned". However, the ERT noted that the information for some of the PaMs is not consistent with the information in BR3 CTF table 3 (annex 1 to the NC7). For example, some of the PaMs have the status "planned" in annex 4 to the NC7, whereas in BR3 CTF table 3 the status is "implemented" (e.g. support for voluntary commitments to energy savings, National Strategy of Cycling Transport Development, and Efficiency Improvement of District Heating Systems). During the review, Czechia explained that the PaMs concerned were recently included as "implemented" under the WEM scenario and that annex 4 to the NC7 was not updated accordingly. The ERT recommends that Czechia report consistent and up-to-date information on the status of implementation of individual PaMs in its next NC.

Notes: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

C. Projections and the total effect of policies and measures, including information on supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

1. Projections overview, methodology and results

(a) Technical assessment of the reported information

62. Czechia reported updated projections for 2020 and 2030 relative to actual inventory data for 2015 under the WEM scenario. The WEM scenario reported by Czechia includes implemented and adopted PaMs until June 2016. Updated projections of GHG emissions under the ESD were provided during the review and included in the assessment of the projections.

63. In addition to the WEM scenario, Czechia reported the WAM scenario. The WAM scenario includes planned PaMs. The Party provided a definition of its WEM scenario and explained that its WAM scenario includes additional planned PaMs such as support for voluntary commitments to energy savings in industry, economic and tax tools and the Nitrates Directive Fourth Action Plan. The definitions indicate that the scenarios were prepared according to the UNFCCC reporting guidelines on NCs. During the review, the Party provided additional information on the PaMs included in each of the scenarios of projected GHG emissions. The ERT commends Czechia for the detailed information provided during the review.

64. The projections are presented on a sectoral basis, using the same sectoral categories as those used in the reporting on mitigation actions, and on a gas-by-gas basis for CO_2, CH_4, N_2O, PFCs and HFCs (collectively), SF_6 and NF_3 for 2015–2030. The projections are also provided in an aggregated format for each sector as well as for a Party total using global warming potential values from the IPCC Fourth Assessment Report.

65. Czechia did not report emission projections for indirect GHGs such as carbon monoxide, nitrogen oxides, non-methane volatile organic compounds or sulfur oxides.

66. Emission projections related to fuel sold to aircraft engaged in international transport were reported separately and were not included in the totals. Czechia explained in its NC7 that emissions related to fuel sold to ships for international transport do not occur in the country. The Party reported on factors and activities affecting emissions for each sector.

(b) Methodology, assumptions and changes since the previous submission

67. The methodology used for the preparation of the projections is different from that used for the preparation of the emission projections for the BR2. Czechia stated in its NC7 and BR3 that the methodology used is in line with the methodology used for the compilation of its third, fourth, fifth and sixth NCs. However, since its NC6 and BR2, the Party has changed the model used for projecting GHG emissions from fuel combustion from EFOM/ENV to MESSAGE (see issues 4–7 in table 13).

68. Czechia reported supporting information further explaining the methodology. The Party's methodology comprises the following set of actions: (1) preparation of the GHG inventory; (2) selection of the start and end year and cross-sectional years for the projections; (3) selection of methodology and modelling tools for the projections; (4) collection and analysis of input data; (5) determination of initial assumptions; (6) definition of scenarios; (7) calculation of scenarios and preparation of results; and (8) sensitivity analysis of the selected assumptions.

69. GHG emissions from fuel combustion and industrial processes were projected using the MESSAGE model. In addition, Czechia applied the COPERT IV model for projecting GHG emissions for the road transportation sector. The GHG emission projections for the agriculture sector are based, using a spreadsheet, on the sectoral emission trends and information from strategic documents prepared by the Ministry of Agriculture. The EFISCEN model (see issues 4 and 5 in table 13) was used for the projection of GHG emissions/removals related to forestry, while GHG emissions and removals from other

LULUCF categories were projected by applying correlations to the reference year emissions linked to the projected land-use change matrix. For projecting GHG emissions from the waste sector, statistical projected activity data were used in the final GHG emission calculations, where assumptions and forecasted scenarios from the Waste Management Plan 2015–2024 were applied.

70. To prepare its projections, Czechia relied on key underlying assumptions of population, number of households, GDP growth rate, international oil price, international coal price and international gas price. These variables and assumptions were reported in CTF table 5. The assumptions were updated on the basis of the most recent economic developments at the time of the preparation of the projections.

71. According to the Czech Statistical Office, Czechia's population is projected to slightly decrease from 2015 to 2035, while the number of households is projected to slightly increase. An official projection of long-term trends in GDP was not available for the outlook to 2030; however, the GDP trend assumed for the projections is based on predictions made by a consultancy company for the electricity market operator. An increase in GDP is projected for the most relevant sectors, such as industry, construction, agriculture, transport and services, with the highest increases in the services, transport and industry sectors. The prices of fuels in the global market were taken from 2016 EU statistical documents. International fuel prices (oil price, coal price, gas price) are projected to increase until 2035. The Party also projected a decrease in coal availability, with a significant number of coal types projected to be economically unprofitable to use by 2025 (e.g. hard coking coal, hard steam coal, brown steam coal).

72. Sensitivity analyses were conducted for the most important assumptions, such as economic development indicators. A sensitivity analysis was also conducted for CO_2 emissions from fuel combustion in the energy sector (1.A). The dependency on economic development was tested for a change of ±5 per cent in GDP using the MESSAGE model. The results of the sensitivity analysis under the WEM scenario show a range for CO_2 emissions from the energy sector (1.A) of between –7.7 and +5.3 per cent.

(c) Results of projections

73. The projected emission levels under different scenarios and information on the Kyoto Protocol targets and the quantified economy-wide emission reduction target are presented in table 10 and in the figure below.

Table 10
Summary of greenhouse gas emission projections for Czechia

	GHG emissions (kt CO_2 eq per year)	*Changes in relation to base-year[a] level (%)*	*Changes in relation to 1990 level (%)*
Kyoto Protocol base year[b]	198 316.41	NA	0.2
Quantified emission limitation or reduction commitment under the Kyoto Protocol (2013–2020)[c]	65 064.40	NA	NA
Quantified economy-wide emission reduction target under the Convention[d]	NA	NA	NA
Inventory data 1990[e]	195 827.08	–1.3	NA
Inventory data 2015[e]	127 126.84	–35.9	–35.1
WEM projections for 2020[f]	122 497.75	–38.2	–37.4
WAM projections for 2020[f]	122 137.47	–38.4	–37.6
WEM projections for 2030[f]	108 820.83	–45.1	–44.4
WAM projections for 2030[f]	107 810.08	–45.6	–44.9

Note: The projections are for GHG emissions without LULUCF.

[a] "Base year" in this column refers to the base year used for the target under the Kyoto Protocol, while for the target under the Convention it refers to the base year used for that target.

[b] The Kyoto Protocol base-year level of emissions is provided in the initial review report, contained in document FCCC/IRR/2016/CZE.

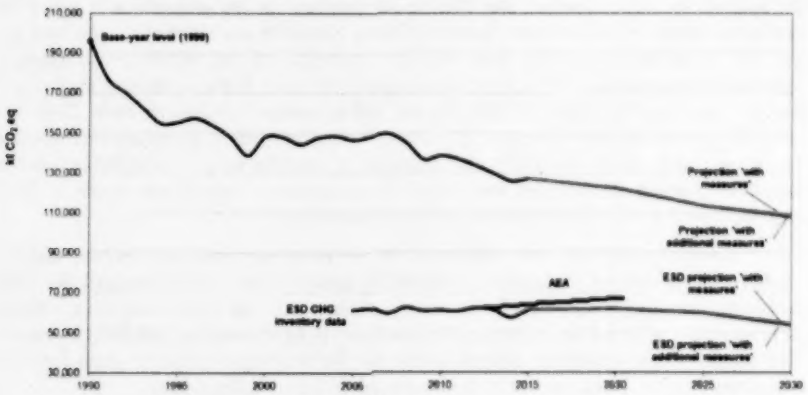
[c] The Kyoto Protocol target for the second commitment period (2013–2020) is a joint target of the EU and its 28 member States and Iceland. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. Czechia's target under the ESD is to limit its emission growth to 9.0 per cent above the 2005 level by 2020.

[d] The quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its 28 member States. The target is to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020.

[e] From Czechia's BR3 CTF table 6(a).

[f] From Czechia's NC7 and/or BR3.

Greenhouse gas emission projections reported by Czechia



Sources: (1) Data for the years 1990–2015: Czechia's 2017 annual inventory submission, version 4; total GHG emissions excluding LULUCF; (2) data for the years 2016–2030: Czechia's NC7 and BR3; total GHG emissions excluding LULUCF; updated projections provided by the Party during the review.

74. Czechia's total GHG emissions excluding LULUCF in 2020 and 2030 are projected to be 122,497.75 and 108,820.83 kt CO_2 eq, respectively, under the WEM scenario, which represents a decrease of 37.4 and 44.4 per cent, respectively, below the 1990 level. Under the WAM scenario, emissions in 2020 and 2030 are projected to be lower than those in 1990 by 37.6 and 44.9 per cent and amount to around 122,137.47 and 107,810.08 kt CO_2 eq, respectively. The 2020 projections suggest that Czechia will continue contributing to the achievement of the EU target under the Convention.

75. Czechia's target for non-ETS sectors is to limit its emission growth to 9.0 per cent above the 2005 level by 2020 (see para. 41 above). The AEAs, which correspond to its national emission target for non-ETS sectors, change linearly from 62,474.35 kt CO_2 eq in 2013 to 67,204.65 kt CO_2 eq in 2020. According to the projections under the WEM scenario, emissions from non-ETS sectors are estimated to reach 61,948.66 kt CO_2 eq by 2020. Under the WAM scenario, Czechia's emissions from non-ETS sectors in 2020 are projected to be 61,633.79 kt CO_2 eq. The projected levels of emissions under the WEM and WAM scenarios are 7.8 and 8.3 per cent, respectively, below the AEAs for 2020. This suggests that Czechia expects to meet its ESD target under the WEM scenario.

76. Czechia presented the WEM and WAM scenarios by sector for 2020 and 2030, as summarized in table 11.

Table 11
Summary of greenhouse gas emission projections for Czechia presented by sector

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
	1990	*2020*		*2030*		*1990–2020*		*1990–2030*	
Sector		*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
Energy (not including transport)	151 289	75 650	75 593	66 021	65 941	–50.0	–50.0	–56.4	–56.4
Transport	7 284	18 551	18 291	15 883	15 632	154.7	151.1	118.1	114.6
Industry/industrial processes	17 080	14 763	14 763	13 170	13 170	–13.6	–13.6	–22.9	–22.9
Agriculture	17 050	8 639	8 596	9 682	9 279	–49.3	–49.6	–43.2	–45.6
LULUCF	–6 488	–3 483	–2 953	–3 483	–3 878	–46.3	–54.5	–46.3	–40.2
Waste	3 127	4 895	4 895	4 064	3 789	56.5	56.5	30.0	21.2
Total GHG emissions without LULUCF	**195 827**	**122 498**	**122 137**	**108 821**	**107 810**	**–37.4**	**–37.6**	**–44.4**	**–44.9**

Source: GHG emission data: Czechia's 2017 annual inventory submission, version 4.

77. According to the projections reported for 2020 under the WEM scenario, the most significant emission reductions are expected to occur in the energy and agriculture sectors, amounting to projected reductions of 75,638.78 kt CO_2 eq (50.0 per cent) and 8,411.05 kt CO_2 eq (49.3 per cent) between 1990 and 2020, respectively. The pattern of projected emissions reported for 2030 under the same scenario remains the same. According to the projections reported for 2030 under the WEM scenario, the most significant emission reductions are also expected to occur in the energy and agriculture sectors, amounting to projected reductions of 85,267.68 kt CO_2 eq (56.4 per cent) and 7,367.65 kt CO_2 eq (43.2 per cent) between 1990 and 2030, respectively.

78. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 presented by sector and by gas remain the same as for the WEM scenario. There are no significant differences between the WEM and WAM scenarios observed for projected GHG emissions. According to information provided by Czechia during the review, the differences in the energy sector between the WEM and WAM scenarios are due mainly to the additional PaMs that had already been adopted and implemented by the time of the submission of its NC7 and BR3, and to the increase in energy consumption that offsets the effect of planned PaMs such as voluntary commitments to energy savings. The small difference between the WEM and WAM scenarios in the agriculture sector is related to the planned adoption of the Nitrates Directive Fourth Action Plan, which has an implementation period of 2016–2035, and the Action Plan for Development of Organic Farming (implementation period 2016–2020).

79. Czechia presented the WEM and WAM scenarios by gas for 2020 and 2030, as summarized in table 12.

Table 12
Summary of greenhouse gas emission projections for Czechia presented by gas

	GHG emissions and removals (kt CO_2 eq)					*Change (%)*			
	1990	*2020*		*2030*		*1990–2020*		*1990–2030*	
Gas		*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*	*WEM*	*WAM*
CO_2	161 650	100 256	99 938	88 501	88 169	–38.0	–38.2	–45.3	–45.5
CH_4	23 451	13 258	13 258	12 289	12 013	–43.5	–43.5	–47.6	–48.8
N_2O	10 643	6 539	6 496	7 063	6 659	–38.6	–39.0	–33.6	–37.4
HFCs	NO	2 334	2 334	858	858	NA	NA	NA	NA
PFCs	NO	4	4	4	4	NA	NA	NA	NA
SF_6	84	106	106	104	104	25.5	25.5	24.0	24.0

Gas	GHG emissions and removals (kt CO_2 eq)					Change (%)			
	1990	2020		2030		1990–2020		1990–2030	
		WEM	WAM	WEM	WAM	WEM	WAM	WEM	WAM
NF_3	NO	3	3	3	3	NA	NA	NA	NA
Total GHG emissions without LULUCF	**195 827**	**122 498**	**122 137**	**108 821**	**107 810**	**–37.4**	**–37.6**	**–44.4**	**–44.9**

Source: GHG emission data: Czechia's 2017 annual inventory submission, version 4.

80. For 2020, under the WEM scenario, the most significant emission reductions are projected for CO_2, CH_4 and N_2O at 61,393.99 kt CO_2 eq (38.0 per cent), 10,192.83 kt CO_2 eq (43.5 per cent) and 4,104.02 kt CO_2 eq (38.6 per cent) between 1990 and 2020, respectively. The reduction of CO_2 emissions is due to the restructuring of the economy that took place after 1990 and the economic recession after the global financial crisis in 2008, but also because of the PaMs adopted and implemented, such as the increase in the use of renewable energy sources in energy production and the increase in energy efficiency. The reduction in the use of fertilizers and the decrease in the cattle and pig populations in the agriculture sector has also resulted in the reduction of emissions of N_2O, CH_4 and CO_2.

81. For 2030, under the WEM scenario, the most significant emission reductions are projected for CO_2, CH_4 and N_2O at 73,148.80 kt CO_2 eq (45.3 per cent), 11,162.17 kt CO_2 eq (47.6 per cent) and 3,579.87 kt CO_2 eq (33.6 per cent) between 1990 and 2030, respectively. In its NC7 Czechia reported that an increase in emissions from the agriculture sector is expected (by 17.3 per cent between 2005 and 2030) and that implemented and additional PaMs will not be sufficient to offset the increase in emissions from the sector.

82. If additional measures are considered (i.e. under the WAM scenario), the patterns of emission reductions by 2020 presented by sector and by gas remain the same. A significantly higher decrease in N_2O emissions is expected under the WAM scenario compared with the WEM scenario, which could be explained by the reduction of N_2O emissions from the agriculture sector due to the adoption of the Nitrates Directive Fourth Action Plan.

83. The ERT noted that the difference in GHG emission projections between the WEM and WAM scenarios reported in the BR2 (2.4 per cent for 2030) was larger than the difference reported in the NC7 and BR3 (0.9 per cent for 2030). During the review, Czechia explained that a significant number of planned PaMs that were included in the WAM scenario in its BR2 had since been adopted or implemented and were therefore included in the WEM scenario in its NC7 and BR3.

(d) Assessment of adherence to the reporting guidelines

84. The ERT assessed the information reported in the NC7 of Czechia and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table 13.

Table 13
Findings on greenhouse gas emission projections reported in the seventh national communication of Czechia

No.	Reporting requirement, issue type and assessment	Description of the finding with recommendation or encouragement
1	Reporting requirement specified in paragraph 28	Czechia reported projections of GHG emissions under the WEM and WAM scenarios. However, the ERT noted that GHG emissions under the 'without measures' scenario were not provided.
	Issue type: completeness	The ERT reiterates its encouragement of Czechia to estimate and report GHG emission projections also under a 'without measures' scenario for its next NC.
	Assessment: encouragement	

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
2	Reporting requirement specified in paragraph 29 Issue type: transparency Assessment: recommendation	The ERT noted that Czechia did not provide information in the NC7 or BR3 on whether the PaMs included in each projection scenario were planned, adopted or implemented. During the review, the Party provided detailed information on each specific PaM, including the projection scenarios where each PaM was considered. The ERT welcomes the additional information provided by the Party and reiterates the recommendation made in the previous review report that Czechia provide in its next NC information on which specific PaMs (planned, adopted, implemented) are included in each of the projection scenarios.
3	Reporting requirement specified in paragraph 38 Issue type: completeness Assessment: encouragement	Czechia provided graphs illustrating its projections for the agriculture, LULUCF and waste sectors as well as total projected GHG emissions. Graphs illustrating the projected GHG emissions for the energy and IPPU sectors were not included in the NC7. The ERT encourages Czechia to provide in its next NC diagrams illustrating projected GHG emissions for all inventory sectors.
4	Reporting requirement specified in paragraph 43 Issue type: completeness Assessment: encouragement	Czechia identified in its NC7 the models used for projecting GHG emissions and removals (e.g. COPERT, MESSAGE, EFISCEN). However, the ERT noted that, except for the model MESSAGE, only the model names were provided. Czechia did not provide information for each model on type, original purpose, any modifications performed for climate change purposes, or strengths and weaknesses. During the review, Czechia provided additional descriptive information on the models used for projecting GHG emissions. The ERT encourages Czechia to provide in its next NC brief information on the models used to project GHG emissions and removals, including for each model the coverage and type, original purpose, any modifications performed for climate change purposes, and strengths and weaknesses, to facilitate a basic understanding of the models.
5	Reporting requirement specified in paragraph 44 Issue type: completeness Assessment: encouragement	Czechia identified the models used for projecting GHG emissions (e.g. COPERT, MESSAGE, EFISCEN). However, the ERT noted that, except for the model MESSAGE, only the model names were provided. Czechia did not provide in its NC7 references to more detailed information on the models used. During the review, Czechia provided further details on the models used, including references for the MESSAGE (via a link to the model's web page http://www.iiasa.ac.at/web/home/research/researchPrograms/Energy/MESSAGE.en.htm[1] and EFISCEN models. No references were provided by the Party for the COPERT model. The ERT encourages the Party to include in its next NC references to more detailed information on the models used for projecting GHG emissions and removals.
6	Reporting requirement specified in paragraph 45 Issue type: transparency Assessment: encouragement	Czechia stated in its NC7 that the methodology used in the preparation of the emission projections is in line with the methodology used for the compilation of its third, fourth, fifth and sixth NCs. However, the ERT noted that, since the NC6, the Party has changed the model used for projecting GHG emissions from fuel combustion from the EFON/ENV model to the MESSAGE model. The ERT encourages the Party to provide in its next NC information on any changes in the models used to prepare the GHG projections, including the main differences between the models regarding assumptions, methods and results.

Notes: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

2. Assessment of the total effect of policies and measures

(a) Technical assessment of the reported information

85. In the NC7 Czechia presented the estimated and expected total effect of implemented and adopted PaMs and an estimate of the total effect of its PaMs, in accordance with the WEM and WAM scenarios, compared with a situation without such PaMs. During the review, Czechia explained that the individual effects of the PaMs in each sector were aggregated to estimate the total effect of the PaMs implemented and planned. Information is presented in terms of GHG emissions avoided or sequestered, by sector, in 2020 and 2030. The ERT noted that the estimated and expected total effect of implemented and adopted PaMs in terms of GHG emissions avoided or sequestered, by gas (on a CO_2 eq basis), was not reported.

86. Czechia reported that the total estimated effect of its adopted and implemented PaMs is 16,466 kt CO_2 eq in 2020. According to the information reported in the NC7, PaMs implemented in the energy, transport and IPPU sectors will deliver the largest emission reductions, followed by PaMs implemented in the agriculture and waste sectors. Table 14 provides an overview of the total effect of PaMs as reported by Czechia.

Table 14
Projected effects of Czechia's planned, implemented and adopted policies and measures by 2020 and 2030

	2020		*2030*	
Sector	*Effect of implemented and adopted measures (kt CO_2 eq)*	*Effect of planned measures (kt CO_2 eq)*	*Effect of implemented and adopted measures (kt CO_2 eq)*	*Effect of planned measures (kt CO_2 eq)*
Energy (without transport)	7 774	621	9 135	495
Transport	2 675	160	4 380	176
Industrial processes	3 152	0	4 775	0
Agriculture	825	0	912	0
Land-use change and forestry	NA	NA	NA	NA
Waste management	466	0	1 304	0
Total	**15 685**	**16 466**	**21 171**	**21 842**

Source: Czechia's NC7.

Note: The total effect of the implemented and adopted PaMs is defined as the aggregation of the individual effects of the PaMs in each sector.

(b) Assessment of adherence to the reporting guidelines

87. The ERT assessed the information reported in the NC7 of Czechia and identified issues relating to completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. The findings are described in table 15.

Table 15
Findings on the assessment of the total effect of policies and measures from the review of the seventh national communication of Czechia

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 40	Czechia did not provide information on the total effect of PaMs under the WEM scenario compared with a situation without such PaMs in terms of GHG emissions avoided or sequestered, by gas (on a CO_2 eq basis), for 1995 and 2000.
	Issue type: completeness	The ERT recommends that Czechia report estimates of the total effect of PaMs by gas (on a CO_2 eq basis) compared with a situation without such PaMs for 1995 and 2000.
	Assessment: recommendation	

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
2	Reporting requirement specified in paragraph 40 Issue type: completeness Assessment: encouragement	Czechia did not provide information on the total effect of PaMs under the WEM scenario compared with a situation without such PaMs in terms of GHG emissions avoided or sequestered, by gas (on a CO_2 eq basis), for 2005, 2010 and 2015). For 2020 and 2030 Czechia reported in its NC7 the total effect of PaMs, but not by gas (on a CO_2 eq basis). During the review, Czechia explained that the projected GHG emission reductions are mainly driven by CO_2 and that only in the agriculture sector there are some CH_4 and N_2O savings projected, while in the other sectors the share of non-CO_2 gases in the emission reductions is negligible. Czechia stated that it intends to report emission projections by gas in its next NC and BR. The ERT encourages Czechia to report estimates of the total effect of PaMs by gas (on a CO_2 eq basis) compared with a situation without such PaMs for 2005, 2010, 2015 and 2020.
3	Reporting requirement specified in paragraph 41 Issue type: transparency Assessment: encouragement	Czechia reported in its NC7 the total effect of its PaMs in 2020 and 2030 by sector (except LULUCF) for both the WEM and WAM scenarios. However, the ERT could not identify the approach used by Czechia to calculate the total effect of its PaMs. During the review, Czechia explained that it aggregated the individual effects of the PaMs in each sector to calculate the total effect of its PaMs. The ERT encourages Czechia to provide in its next NC and BR information on the approach used to estimate the total effect of PaMs.

Notes: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

3. Supplementarity relating to the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol

(a) Technical assessment of the reported information

88. In the NC7 Czechia provided information on how its use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action, although it did not elaborate on supplementarity as such. Czechia reported that it did not use any units from market-based mechanisms or LULUCF and that it has no plans to use the market-based mechanisms to meet its Kyoto Protocol target for the second commitment period.

89. Czechia also reported that it requested to carry over a share of its assigned amount units in its holding account (48,272,014) for the second commitment period of the Kyoto Protocol. All other units in the national registry for the first commitment period (about 680 million units as reported in the 2017 registry status reports for the first commitment period) have been retired.

(b) Assessment of adherence to the reporting guidelines

90. The ERT assessed the information reported in the NC7 of Czechia and recognized that the reporting is complete and transparent. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

D. Provision of financial and technological support to developing country Parties, including information under Articles 10 and 11 of the Kyoto Protocol

91. Czechia is not an Annex II Party and is therefore not obliged to adopt measures and fulfil obligations defined in Article 4, paragraphs 3, 4 and 5, of the Convention. However, Czechia provided information in the NC7 on its provision of support to developing country

Parties. The ERT commends Czechia for reporting this information and suggests that it continue to do so in future NCs.

92. Czechia has been providing climate-specific support to developing countries since 2010. The main means through which climate financing has been delivered to developing countries are technology transfer and the Development Cooperation Strategy of the Czech Republic 2010–2017. The support has been identified using a methodology provided by the Development Assistance Committee of the Organisation for Economic Co-operation and Development. The strategy has two main delivery channels: bilateral development cooperation and multilateral development cooperation. Regarding bilateral development cooperation, priorities are focused on countries that Czechia already has cooperation programmes with, namely Afghanistan, Bosnia and Herzegovina, Ethiopia, Mongolia and the Republic of Moldova, and the 'project countries' Cambodia, Georgia, Serbia and the State of Palestine.

93. The Party's total contribution of climate-specific financial support in 2016 amounted to USD 7,549,156, distributed, by funding type, as USD 2,779,781 through multilateral channels and USD 4,769,375 through bilateral, regional and other channels covering mitigation, adaptation, cross-cutting and other activities. Tables 16 and 17 summarize information on financial support by Czechia.

Table 16
Summary of information on provision of financial support by Czechia in 2013–2016
(Millions of United States dollars)

	Year of disbursement			
Allocation channel of public financial support	*2013*	*2014*	*2015*	*2016*
Official development assistance[a]	254.71	236.40	223.10	265.01
Climate-specific contributions through multilateral channels, including:				
Global Environment Facility	1.33	0.46	0.39	0.39
Green Climate Fund	0.31	0.48	2.03	2.05
Financial institutions, including regional development banks	–	19.83	–	6.81
Other	–	–	0.64	0.64
Climate-specific contributions through bilateral, regional and other channels	5.06	5.37	6.02	5.28

[a] *Sources*: (1) Query Wizard for International Development Statistics, available at http://stats.oecd.org/qwids/; (2) Czechia's BR3 CTF tables.

Table 17
Summary of information on channels of financial support used in 2015–2016 by Czechia
(Millions of United States dollars)

	Year of disbursement				*Share (%)*	
Allocation channel of public financial support	*2015*	*2016*	*Difference*	*Change (%)*	*2015*	*2016*
Support through bilateral and multilateral channels allocated for:						
Mitigation	3.27	1.77	–1.51	–46.0	36.1	11.7
Adaptation	2.74	3.06	0.32	11.7	30.2	20.2
Cross-cutting	3.05	10.33	7.28	238.3	33.7	68.1
Other	–	–	–	–	–	–
Total	**9.07**	**15.16**	**6.09**	**67.1**	**100.0**	**100.0**
Detailed information by type of channel						
Multilateral channels						

Allocation channel of public financial support	Year of disbursement				Share (%)	
	2015	2016	Difference	Change (%)	2015	2016
Mitigation	–	–	–	–	–	–
Adaptation	–	–	–	–	–	–
Cross-cutting	3.05	9.89	6.83	223.6	100.0	100.0
Other	–	–	–	–	–	–
Total	**3.05**	**9.89**	**6.83**	**223.6**	**100.0**	**100.0**
Bilateral channels						
Mitigation	3.27	1.77	–1.51	–46.0	54.4	33.5
Adaptation	2.74	3.06	0.32	11.7	45.6	58.0
Cross-cutting	–	0.45	–	–	–	8.5
Other	–	–	–	–	–	–
Total	**6.02**	**5.28**	**–0.74**	**–12.3**	**100.0**	**100.0**
Multilateral compared with bilateral channels						
Multilateral	3.05	9.89	6.83	223.6	33.7	65.2
Bilateral	6.02	5.28	–0.74	–12.3	66.3	34.8
Total	**9.07**	**15.16**	**6.09**	**67.1**	**100.0**	**100.0**

Sources: CTF tables 7, 7(a) and 7(b) of the BR3 of Czechia.

E. Vulnerability assessment, climate change impacts and adaptation measures

1. Technical assessment of the reported information

94. In the NC7 Czechia provided information on the expected impacts of climate change in the country; the adaptation policies covering regional, sectoral and cross-sectoral vulnerabilities and considerations; and an outline of the action taken to implement Article 4, paragraph 1(b) and (e), of the Convention with regard to adaptation.

95. Czechia prepared and approved its national strategy on adaptation to climate change in 2015, identifying vulnerabilities and defining general adaptation measures for relevant sectors. During the review week, Czechia provided the ERT with a copy in English of the document explaining the strategy. The document describes the coordination of adaptation and mitigation measures and the monitoring and evaluation of climate change adaptation measures by the Interministerial Working Group on Climate Protection.

96. More recently, in 2017, Czechia approved the National Action Plan on Adaptation to Climate Change, which identifies priority adaptation measures addressing the key climate change risks in an integrated, cross-sectoral manner.

97. Czechia included in its NC7 information on the sources of funding for most of the adaptation measures. However, the ERT noted that the reported information was not transparent in terms of institutional arrangements to implement the adaptation measures. Also, gaps, challenges and barriers in implementing the adaptation measures, and the proposed improvements for effective implementation of each adaptation measure, were only marginally discussed for most of the adaptation measures.

98. Table 18 summarizes the information on vulnerability and adaptation to climate change presented in the NC7.

Table 18
Summary of information on vulnerability and adaptation to climate change reported by Czechia

Vulnerable area	*Examples comments adaptation measures reported*
Agriculture	*Vulnerability*: Decrease in crop production owing to drought in most productive farming areas caused by decreasing precipitation and increasing evapotranspiration; more frequent storm rainfall causing soil erosion in farmland; increase in pests and diseases in crops owing to increasing temperature. *Adaptation*: (1) Land consolidation to improve anti-erosion measures and water regime in the landscape; (2) genetic resources, research, breeding and agricultural biotechnology to develop suitable crop species and livestock that are pest resistant and cope well with droughts, high air temperature and soil erosion; (3) implementation of the EU good agricultural and environmental condition standards, which favour farming activities to increase soil water retention and to protect against soil erosion; (4) construction and upgrading of irrigation system for water use efficiency and to make crop production possible even during prolonged drought.
Biodiversity and ecosystem services	*Vulnerability*: Plant species in alpine and grassland ecosystems in danger of extinction; spread of invasive non-indigenous species will substantially endanger biological diversity, biotopes or even entire ecosystems; decrease in the number of northerly species of birds with a corresponding increase in southerly bird populations; changes in species and population biodiversity will trigger the emergence of new ecosystem types. *Adaptation*: (1) Establishment and management of vegetation in urban areas such as parks, vegetation isolation zones and water features; (2) integration of ecosystem services with measures implemented in agricultural, forest and water ecosystems; (3) protection and restoration of naturally abundant species to ensure interconnectedness and permeability for organisms; (4) slowing down the spread of invasive alien species of plants and animals; (5) strengthening the population of endangered species of wild plants and animals within the framework of rescue programmes; (6) conservation of genetic resources.
Industry and energy sectors	*Vulnerability*: Extreme events will affect hydropower electricity generation and the transmission and distribution networks; long-term occurrence of extremely high temperatures will increase the demand for electricity consumption dedicated to cooling and may even lead to network overload and, in extreme cases, to breakdowns; long-term occurrence of extremely low temperatures may lead to complications in the energy supply area; longer periods without precipitation will reduce the potential of hydropower plants. *Adaptation*: (1) Crisis and emergency plans and risk management systems to ensure safety of industrial facilities; (2) development of smart grids, decentralization of electricity production and cybersecurity to prevent network congestion and the risk of outages; (3) maintaining sufficient capacity of domestic gas storage facilities to ensure the availability of gas reserves; (4) maintaining oil stocks for State emergencies and supply to the population; (5) setting emergency regimes to switch to emergency power supplies in the event of a reduction in the supply of primary fuels for heat supply systems; (6) ensuring the availability of biomass as an energy source (e.g. wet and dry biomass, waste or liquid biofuels).
Urban landscape	*Vulnerability*: Frequent extreme events will affect the quality of life and availability of water in large cities; more intensive precipitation events and strong winds will increase the danger of building constructions being damaged, thus lowering the value and lifetime and increasing the costs of repair and maintenance. *Adaptation*: (1) Minimizing run-off by conservation and restoration of close-to-nature water bodies; increasing the proportion of surfaces with water-permeable surfaces; constructing water retention structures and infiltration systems; using vegetation on roofs and walls; and collecting rainwater for possible use; (2) reducing pollution of surface run-off by minimizing the contact of surface run-off with potential sources of pollution; minimizing the salting of roads and use of herbicides, pesticides and inorganic fertilizers; (3) management of urban greenery to increase the share and functional quality of available green and water areas in line with the population density; (4) high-quality construction and energy-efficient renovation of buildings using renewable energy sources and modern technologies; (5) shading of buildings and windows, installation of outdoor shutters and blinds, and introduction of 'green' and light surfaces (on roofs and pavements).
Emergency events and protection of the population and the environment	*Vulnerability*: Greater need for and demands on civil protection, environmental security, resources, and crisis and risk and rescue management; high vulnerability of critical infrastructure such as energy and water supplies, transport, telecommunications and information technology that could result from its mutual interconnectedness and breakdown. *Adaptation*: (1) Establishing early warning systems and forecasting systems to predict natural disasters; (2) further development and strengthening of integrated rescue units and emergency

Vulnerable area	*Examples comments adaptation measures reported*
	services; (3) displacement of housing built in flood-prone areas by exchanging affected land parcels with suitable land outside the critical zone; (4) creation of a local early warning system using text messaging; (5) creation of a method to assist households facing frequent climatic extremes; (6) support for research, development and innovation in the environmental security sector.
Tourism and recreation	*Vulnerability*: The expected increase in summer temperatures could increase interest in summer recreation around natural and artificial water reservoirs, but prolonged high temperatures will cause substantial heating of water volumes with subsequent reduction in water quality, accompanied by the growth of blue-green algae; the shortening of the winter skiing season in recent years has reduced the number of tourists and recreational activities. *Adaptation*: (1) Promoting the cross-sectoral cooperation and exchange of information necessary for the sustainable development of tourism; (2) integrating tourism into strategies and plans in order to protect the landscape, biodiversity and ecosystems and to ensure sustainable use of natural resources; (3) promoting environmentally friendly forms of tourism and responsible tourism.
Forest management	*Vulnerability*: Increased risk of forest fires caused by drought; more pests owing to the increasing frequency of climate-related calamities such as destructive gusty winds, wet snow, landslides after extreme rainfall and forest fires. *Adaptation*: (1) Using natural processes and the cultivation of spatially varied and species-rich forest stands to resist climate change impacts and to promote forest regeneration; (2) changing the preference of species and ecotypes of forest tree species to maximize the species composition; (3) stabilization of carbon volumes bound in forest ecosystems through forestry techniques that provide permanent soil protection; (4) increasing the availability of genetic resources of forest tree species to increase biological diversity, ecological stability and resilience of forests.
Health and hygiene	*Vulnerability*: An increase in the number of days of the temperature exceeding 30 °C may lead to (1) increased risk of overheating of organisms, heatstrokes and dehydration, as well as cardiovascular, renal, respiration and metabolic disorders and (2) a significant rise in diseases transmitted between animals and people, affecting both the animal host and the agent. *Adaptation*: (1) A monitoring and forecasting system of possible risks associated with extreme events (e.g. contagious and other diseases); (2) suitable architecture, spatial planning and suburban vegetation to alleviate the effects of heat islands in cities and to reduce thermal stress.
Transportation	*Vulnerability*: Extreme weather fluctuations may significantly affect roads, railways, river and air transport systems; a rise in temperatures and more frequent fluctuations between high and low temperatures will increase the demand on energy consumption for air conditioning in public, personal and even freight transport; heatwaves in the summer may result in an increased accident rate due to lowered concentration among drivers and, on the other hand, sudden frost or snowdrifts in winter will increase accident rates. *Adaptation*: (1) Implementing engineering measures to protect transport infrastructure; (2) designing buildings and transport structures that take into account the impacts of climate change; (3) research and development of new materials and technologies that reduce the risk of negative technical, economic and health impacts; (4) adapting laws and standards relating to building structures in the context of climate change; (5) systematic planting of woody plants along roads to dampen extreme stress on the structure and to protect vehicles from sun, wind and snow.
Water regime in the landscape and water management	*Vulnerability*: In summer and autumn: decrease in average flow rates in many river basins; decrease in the groundwater reservoir; decrease in usable water sources and water quality; and increased risk of drought; in winter and spring: increased run-off and occurrence of floods and inundation. *Adaptation*: (1) Proper management of agricultural and forest land to ensure the stability of the water regime in the landscape; (2) a system of rainwater management and water reuse in urbanized areas; (3) river basin management plans and flood risk management plans to prevent the negative impacts of floods and droughts; (4) development of water supply and sewerage to ensure and maintain sufficient back-up water resources for drinking water supply during long-term droughts; (5) restoring small water reservoirs and enhancing their reliability; (6) comprehensive revitalization of water courses and floodplains and facilitation of natural or controlled flooding in the floodplains; (7) rationalization of the licensing system for water abstraction and discharge to ensure sustainable use of water resources.

2. Assessment of adherence to the reporting guidelines

99. The ERT assessed the information reported in the NC7 of Czechia and identified an issue relating to transparency, completeness and adherence to the UNFCCC reporting guidelines on NCs. The finding is described in table 19.

Table 19
Findings on vulnerability assessment, climate change impacts and adaptation measures from the review of the seventh national communication of Czechia

No.	*Reporting requirement, issue type and assessment*	*Description of the finding with recommendation or encouragement*
1	Reporting requirement specified in paragraph 49 Issue type: transparency Assessment: encouragement	Czechia included information in its NC7 on the expected impacts of climate change but it was not clear to the ERT how these impacts were estimated and whether Czechia used the guidelines and methods provided in the UNFCCC reporting guidelines on NCs. During the review, Czechia presented its recent studies on the expected impacts of climate change using methods that are consistent with the *IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations* and the United Nations Environment Programme *Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies*. The ERT reiterates the encouragement made in the previous review report that Czechia report information on the methods and sources of information used for quantifying its vulnerability estimates.

Notes: Paragraph number listed under reporting requirement refers to the relevant paragraph of the UNFCCC reporting guidelines on NCs. The reporting on the requirements not included in this table is considered to be complete, transparent and adhering to the UNFCCC reporting guidelines on NCs.

F. Research and systematic observation

1. Technical assessment of the reported information

100. In the NC7 Czechia provided information on its general policy and funding relating to research and systematic observation and on both domestic and international activities, including information on (1) research, including a list of priority studies; (2) systematic observation, including a list of national policies; and (3) assistance provided to developing countries, including a list of national policies.

101. The NC7 provides information on Czechia's contributions to the World Climate Programme, the International Geosphere–Biosphere Programme, the Global Climate Observing System and the IPCC. The systematic observation of the climate system is carried out in Czechia mostly by CHMI.

102. Czechia has implemented and planned international and domestic policies and programmes on climate change research, systematic observation, climate modelling and climate database management as the fundamental basis for all activities connected with the protection of the climate. Regarding modelling, the most important action is its participation in the Regional Co-operation for Limited Area modelling in Central Europe project (the ARPEGE-CLIMAT model). On database management, the programme database "CLIDATA system" was created for better administration of metadata pertaining to meteorological, climatological and precipitation (including foreign) networks used by CHMI.

103. In terms of support provided to developing countries, the Global Change Research Institute of the Czech Academy of Sciences (CzechGlobe) provides training to PhD students and experts in many developing countries. This includes the implementation of joint projects leading to the creation of research on GHG cycles in tropical ecosystems and the transfer of knowledge on climate change adaptation and climate services related to food security. Czechia also provides assistance to developing countries via training courses, and assistance for the installation and calibration of instruments (e.g. for monitoring the ozone layer).

104. During the review week, the Party provided additional information on data delivery and exchange of information with international databases, including the publication of scientific papers as an approach to disseminating information on research findings.

105. The ERT considers the information provided on actions related to research and systematic observation to be comprehensive. The ERT commends Czechia for its consistent reporting of actions relating to research and systematic observation, for its continued activities and provision of resources to improve its actions related to research, and for its support extended to developing countries.

2. Assessment of adherence to the reporting guidelines

106. The ERT assessed the information reported in the NC7 of Czechia and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

G. Education, training and public awareness

1. Technical assessment of the reported information

107. In the NC7 Czechia provided information on its general policy for environmental education and public awareness; the State programme for environmental education and eco-counselling; the involvement of its education system at various levels; the sources of funding; and its international activities, including support provided to developing countries. The ERT considers that the information provided on actions relating to education, training and public awareness has improved and is consistent with previous reporting.

108. During the review week, Czechia presented some new material in relation to public information and education, and training programmes, particularly on the State programme for environmental education and eco-counselling for 2016–2025 and on environmental education for school children.

109. The ERT commends Czechia for the improvement in the reporting of its actions relating to education, training and public awareness as well as for its continued effort to develop new public information and education materials and training programmes.

2. Assessment of adherence to the reporting guidelines

110. The ERT assessed the information reported in the NC7 of Czechia and recognized that the reporting is complete, transparent and adhering to the UNFCCC reporting guidelines on NCs. No issues relating to the topics discussed in this chapter of the review report were raised during the review.

III. Conclusions and recommendations

111. The ERT conducted a technical review of the information reported in the NC7 of Czechia in accordance with the UNFCCC reporting guidelines on NCs. The ERT concludes that the reported information mostly adheres to the UNFCCC reporting guidelines on NCs and that the NC7 provides a good overview of the national climate policy of Czechia.

112. The information provided in the NC7 includes most of the elements of the supplementary information under Article 7 of the Kyoto Protocol, with the exception of information on domestic and regional programmes and/or legislative arrangements and enforcement and administrative procedures. Supplementary information under Article 7, paragraph 1, of the Kyoto Protocol on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol was provided by Czechia in its 2017 annual submission.

113. Czechia's total GHG emissions excluding LULUCF covered by its quantified economy-wide emission reduction target were estimated to be 35.4 per cent below its 1990 level, whereas total GHG emissions including LULUCF were 36.7 per cent below its 1990 level, in 2015. Emission decreases have been driven mainly by factors such as decreasing production, the restructuring of the economy in the early 1990s and the economic recession after 2008, as well as the implementation of PaMs to reduce GHG emissions, such as the

introduction of low-carbon technologies and renewable energy sources, the modernization and reform of the industrial and energy sectors, and the improvement of agriculture and waste management practices.

114. Czechia's main policy frameworks relating to energy and climate change are the Climate Protection Policy of the Czech Republic, the State Energy Policy, the State Environmental Policy 2012–2020 and the National Emission Reduction Programme. The mitigation actions with the most significant mitigation impact are the EU ETS, the Integrated Prevention Act (which implements the IPPC directive) and the promotion of renewable energy sources and energy efficiency.

115. The Party's quantified economy-wide emission reduction target under the Convention is a joint target of the EU and its 28 member States to reduce emissions by 20 per cent compared with the base-year (1990) level by 2020. Under the ESD, Czechia's target is to limit its emission growth to 9.0 per cent above the 2005 level by 2020. Its AEAs, which correspond to its national emission target under the ESD, change linearly from 62,474.35 kt CO_2 eq in 2013 to 67,204.65 kt CO_2 eq in 2020. The projections of the Party's emissions under the ESD for 2020 are 7.8 and 8.3 per cent below the AEA for 2020 under the WEM and WAM scenario, respectively. On the basis of the reported information, the ERT concludes that Czechia expects to meet its target for non-ETS sectors.

116. The GHG emission projections provided by Czechia include those under the WEM and WAM scenarios. Under the scenarios, emissions are projected to be 37.4 and 37.6 per cent below the 1990 level in 2020, respectively. On the basis of the reported information, the ERT concludes that Czechia expects to contribute to the EU 2020 target of a 20 per cent emission reduction compared with the 1990 level under both the WEM and WAM scenarios.

117. The NC7 contains information on how the Party's use of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol is supplemental to domestic action, although it did not elaborate on supplementarity as such. Czechia reported that it has no plans to make use of the Kyoto Protocol mechanisms to meet its Kyoto Protocol target for the second commitment period.

118. Czechia provided complete information on the expected impacts of climate change in the country and the associated actions with regard to adaptation. The Party expects an increase in harmful impacts of climate change on the individual components of the natural environment and also anticipates impacts on the energy sector, tourism industry and the overall well-being of the population, especially in larger residential agglomerations. In response Czechia approved in 2017 its National Action Plan on Adaptation to Climate Change, which identifies priority adaptation measures to address the key climate change risks in an integrated, cross-sectoral manner.

119. Czechia reported on its main institutions responsible for research and systematic observation, including the Committee on the Environment of the Academy of Sciences, the National Forestry Committee and a number of university departments and scientific institutions. At State level, systematic observation is carried out mostly by CHMI. In addition, Czechia cooperates with a number of international projects, of which the most important is the Regional Co-operation for Limited Area modelling in Central Europe project.

120. Regarding education, training and public awareness, Czechia reported that the key strategic and cross-sectoral document for the elaboration of detailed environmental programmes, including on climate change, is the State Environmental Policy 2012–2020, which is a long-term preventive instrument aimed at limiting future damage to the environment caused by insufficient knowledge and awareness. Czechia reported on a number of activities and programmes, including education programmes that introduce environmental education as a compulsory cross-cutting subject in all types and levels of school.

121. In the course of the review, the ERT formulated the following recommendations for Czechia to improve its adherence to the UNFCCC reporting guidelines on NCs and its reporting of supplementary information under the Kyoto Protocol:[5]

(a) To improve the completeness of its reporting by:

(i) Providing a description of the procedures for addressing cases of non-compliance under domestic law and a description of any provisions to make publicly accessible the information on legislative arrangements and enforcement and administrative procedures (see table 7);

(ii) Providing information on all the subjects listed in paragraph 22 of the UNFCCC reporting guidelines on NCs (such as the GHG affected and the type of PaM) for each PaM (see table 9);

(iii) Providing estimates of the total effect of PaMs by gas (on a CO_2 eq basis) compared with a situation without such PaMs for 1995 and 2000 (see table 15);

(b) To improve the transparency of its reporting by:

(i) Organizing the reporting of its PaMs by sector, subdivided by gas, or providing links to where in the BR such information is provided, thus ensuring consistency between the NC and BR when they are submitted in the same year (see table 9);

(ii) Providing consistent and up-to-date information on the status of implementation of individual PaMs (see table 9);

(iii) Providing information on which specific PaMs (planned, adopted, implemented) are included in each of the projection scenarios (see table 13).

IV. Questions of implementation

122. During the review the ERT assessed the NC7, including the supplementary information provided under Article 7, paragraph 2, of the Kyoto Protocol, and reviewed the information on the minimization of adverse impacts in accordance with Article 3, paragraph 14, of the Kyoto Protocol with regard to timeliness, completeness, transparency and adherence to the UNFCCC reporting guidelines on NCs. No questions of implementation were raised by the ERT during the review.

[5] The recommendations are given in full in the relevant sections of this report.

Annex

Documents and information used during the review

A. Reference documents

2017 GHG inventory submission of Czechia. Available at http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/10116.php.

BR3 of Czechia. Available at http://unfccc.int/files/national_reports/annex_i_natcom_/application/pdf/17589243_czech_republic-nc7-br3-1-nc7_br3_cze.pdf.

BR3 CTF tables of Czechia. Available at http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/vnd.openxmlformats-officedocument.spreadsheetml.sheet/1930245_czech_republic-br3-1-cze_2018_v1.0.xlsx.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual greenhouse gas inventories". Annex to decision 24/CP.19. Available at http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf.

"Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications". FCCC/CP/1999/7. Available at http://unfccc.int/resource/docs/cop5/07.pdf.

"Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol". Annex to decision 15/CMP.1. Available at http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf.

"Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol". Annex III to decision 3/CMP.11. Available at http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf.

"Guidelines for review under Article 8 of the Kyoto Protocol". Annex to decision 22/CMP.1. Available at http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf.

'Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention". Annex to decision 13/CP.20. Available at http://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf.

NC7 of Czechia. Available at http://unfccc.int/files/national_reports/annex_i_natcom_/application/pdf/17589243_czech_republic-nc7-br3-1-nc7_br3_cze.pdf.

Report on the individual review of the annual submission of Czechia submitted in 2016. FCCC/ARR/2016/CZE. Available at http://unfccc.int/resource/docs/2017/arr/cze.pdf.

Report on the review of the report to facilitate the calculation of the assigned amount for the second commitment period of the Kyoto Protocol of Czechia. FCCC/IRR/2016/CZE. Available at http://unfccc.int/resource/docs/2017/irr/cze.pdf.

Report of the technical review of the second biennial report of the Czech Republic. FCCC/TRR.2/CZE. Available at http://unfccc.int/resource/docs/2016/trr/cze.pdf.

Report on the technical review of the sixth national communication of the Czech Republic. FCCC/IDR.6/CZE. Available at http://unfccc.int/resource/docs/2014/idr/cze06.pdf.

Revisions to the guidelines for review under Article 8 of the Kyoto Protocol. Annex I to decision 4/CMP.11. Available at http://unfccc.int/resource/docs/2015/cmp11/eng/08a01.pdf.

"UNFCCC biennial reporting guidelines for developed country Parties". Annex I to decision 2/CP.17. Available at http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf.

B. Additional information provided by the Party

Responses to questions during the review were received from Mr. Michal Danhelka (Ministry of Environment of Czechia), including additional material. The following documents[1] were provided by Czechia:

Ministry of the Environment of the Czech Republic. 2016. *The State Programme of the Environmental Education and Eco-counselling of the Czech Republic for 2016–2025.*

Ministry of the Environment of the Czech Republic. 2016. *Environmental Education in the Czech Republic.*

Ministry of the Environment of the Czech Republic and Czech Environmental Information Agency. 2016. *Report on the Environment of the Czech Republic.* Available at: http://www.cenia.cz and http://www.mzp.cz.

Ministry of the Environment of the Czech Republic and Czech Hydrometeorological Institute. 2015. *Report on a National System for Policies and Measures and Projections under Article 12 of the Regulation (EU) No 525/2013 and Article 20 of Implementing Regulation (EU) No 749/2017.*

[1] Reproduced as received from the Party.